

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1 – 9 (cancelled)

10. (currently amended) A balance training device usable in a standing posture or a sitting posture, said device comprising:

a plate for carrying a user;

a motor ~~for driving said plate;~~ having a revolving shaft attached to said plate, and driving said plate so as to provide said plate with a tilting motion around an axis of rotation of said revolving shaft;

a rotation angle sensor for measuring a rotation angle of said plate; as said plate is tilted around said axis of rotation of said revolving shaft;

a torque measuring mechanism for measuring a torque applied to said plate based on a motion of said user;

a kinetic model analyzer into which an output from each of said rotation angle sensor and said torque measuring mechanism is inputted, and determining a target rotation angle at which the force applied to said plate by said user is in balance with the rotating force of said motor; and

a motor controller for controlling said motor so that said plate is tilted at said target rotation angle determined by said kinetic model analyzer in accordance with a predetermined kinetic model.

11. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 10, in which said plate rotates around an axis of rotation extending in parallel with a top surface of said plate.

12. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 11, in which said top surface of said plate coincides with a plane containing a center of the axis of rotation.

13. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 11, in which said top surface of said plate is spaced apart by a certain distance from said center of the axis of rotation.

14. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 10, in which said torque measuring mechanism has a pair of force plates each comprising an integrated sensor unit composed of one sensor for measuring a load applied to said plate and the other sensor for measuring a position of a center of loading.

15. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance claim 10, in which said torque measuring mechanism comprises a sensor for measuring a torque applied to said plate, which is mounted on a shaft of said motor for driving said plate.

16. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 14, in which said device has a kinetic model analyzer characterized in that a motion of said plate is defined by a spring constant, a viscous braking coefficient and a moment of inertia, all of which are virtual.

17. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 10, in which said device has a motor controller for controlling said plate with a user carried thereon in accordance with an angle of equilibrium, or an angle making the force applied by the user in balance with the force provided by said motor, that has been arithmetically determined by said kinetic model analyzer.

18. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 10, in which said balance training device can provide the training independently and exclusively directed to each one of three organs, including a semicircular canal, a vision and a deep sensibility, each governing a personal capability of balancing.

19. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 11, in which said torque measuring mechanism has a pair of force plates each comprising an integrated sensor unit composed of one sensor for measuring a load applied to said plate and the other sensor for measuring a position of a center of loading.

20. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance claim 11, in which said torque measuring mechanism comprises a sensor for measuring a torque applied to said plate, which is mounted on a shaft of said motor for driving said plate.

21. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 15, in which said device has a kinetic model analyzer characterized in that a motion of said plate is defined by a spring constant, a viscous braking coefficient and a moment of inertia, all of which are virtual.

22. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 11, in which said device has a motor controller for controlling said plate with a user carried thereon in accordance with an angle of equilibrium, or an angle making the force applied by the user in balance with the force provided by said motor, that has been arithmetically determined by said kinetic model analyzer.

23. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 14, in which said device has a motor controller for controlling said plate with a user carried thereon in accordance with an angle of equilibrium, or an angle making the force applied by the user in balance with the force provided by said motor, that has been arithmetically determined by said kinetic model analyzer.

24. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 15, in which said device has a motor controller for controlling said plate with a user carried thereon in accordance with an angle of equilibrium, or an angle making the force applied by the user in balance with the force provided by said motor, that has been arithmetically determined by said kinetic model analyzer.

25. (previously presented) A balance training device usable in a standing posture or a sitting posture in accordance with claim 16, in which said device has a motor controller for controlling said plate with a user carried thereon in accordance with an angle of equilibrium, or an angle making the force applied by the user in balance with the force provided by said motor, that has been arithmetically determined by said kinetic model analyzer.

AMENDMENTS TO THE DRAWINGS

The attached "Replacement Sheets" of drawings place Figures 1-4 in better form, e.g., by replacing black and white photographs with illustrations. The attached "Replacement Sheets," which include Figures 1-4, replaces the original sheets including Figures 1-4.

Attachment: Replacement Sheets